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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,041	07/11/2001	Michael P. Hollier	36-1459	6105

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EXAMINER

PERUNGAVOOR, SATHYANARAYA V

ART UNIT PAPER NUMBER

2625

DATE MAILED: 03/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/889,041	HOLLIER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Sath V. Perungavoor	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☒ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>10/16/01, 03/10/03</u>  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Duty of Disclosure*

[1] The following is a quotation of the appropriate paragraphs of 37 CFR 1.56:

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is cancelled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is cancelled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

- (1) Prior art cited in search reports of a foreign patent office in a counterpart application, and
- (2) The closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

- (1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or
- (2) It refutes, or is inconsistent with, a position the applicant takes in:
  - (i) Opposing an argument of unpatentability relied on by the Office, or
  - (ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

- (1) Each inventor named in the application;
- (2) Each attorney or agent who prepares or prosecutes the application; and
- (3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

(d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.

(e) In any continuation-in-part application, the duty under this section includes the duty to disclose to the Office all information known to the person to be material to patentability, as defined in paragraph (b) of this section, which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

- Examiner respectfully requests the applicant(s) to disclose any patents and/or applications that may be material to a double patenting rejection.

### ***Priority***

[2] Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

The certified copy has been filed in parent Application No. 09/889,041.

Following documents was received and filed:

1. 9903107.2 (UK)
2. 9903293.0 (UK)
3. PCT/GB00/00171

Following document was NOT received:

1. 99304824.8 (EPO)

Examiner requests the submission/resubmission of the missing document.

### ***Examiner Cited References (PTO-892)***

[3] Examiner respectfully requests the applicant(s) to closely consider all cited references when making amendments and/or arguments, as this will considerably shorten the prosecution process.

Cited references disclose similar subject matter to those present in the instant application's specification.

### ***Specification***

The following is a quotation of the appropriate paragraphs of 37 CFR 1.77:

(b) The specification should include the following sections in order:

- (1) Title of the invention, which may be accompanied by an introductory portion stating the name, citizenship, and residence of the applicant (unless included in the application data sheet).
- (2) Cross-reference to related applications (unless included in the application data sheet).
- (3) Statement regarding federally sponsored research or development.
- (4) Reference to a "Sequence Listing," a table, or a computer program listing appendix submitted on a compact disc and an incorporation-by-reference of the material on the compact disc (see § 1.52(e)(5)). The total number of compact discs including duplicates and the files on each compact disc shall be specified.

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- (5) Background of the invention.
  - (6) Brief summary of the invention.
  - (7) Brief description of the several views of the drawing.
  - (8) Detailed description of the invention.
  - (9) A claim or claims.
  - (10) Abstract of the disclosure.
  - (11) "Sequence Listing," if on paper (see §§ 1.821 through 1.825).
- (c) The text of the specification sections defined in paragraphs (b)(1) through (b)(11) of this section, if applicable, should be preceded by a section heading in uppercase and without underlining or bold type.

[4] The specification is not compliant under 37 CFR 1.77 for the following reason(s):

- Appropriate section demarcations are not lucid.

[5] The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

#### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC  
(See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

[6] Claims 1-6, 8, 12-17, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Rix et al. (“Rix”) [NPL document titled, “Models of Human Perception”].

Regarding claim 1, Rix meets all the claim limitations, as follows:

A method of measuring the differences between a first video signal and a second video signal [Figure 10], comprising the steps of: analysing the information content of each video signal to identify the perceptually relevant boundaries of the video images depicted therein [Page 10, Column 2, Paragraph 1]; comparing the boundaries so defined in the first signal (i.e. original) with those in the second (i.e. degraded) signal [Page 30, Column 2, Paragraph 1]; the comparison including determination of the extent to which the properties of the boundaries defined in the first image (i.e. original) are preserved in the second image (i.e. degraded) [Page 30, Column 2, Paragraph 1], and generating an output indicative of the perceptual difference between the first and second signals [Page 30, Column 2, Paragraphs 1 and 2].

Regarding claim 2, Rix meets all the claim limitations, as follows:

A method according to claim 1, in which the information content is analysed for a plurality of boundary-identifying characteristics [Page 30, Column 1, Paragraph 5], and the properties of the boundaries on which the comparison is based include the

characteristics by which such boundaries are defined in each of the signals [*Figure 10; Page 30, Column 2, Paragraph 1*].

Regarding claim 3, Rix meets all the claim limitations, as follows:

A method according to claim 2, wherein the characteristics include the presence of edges [*Page 30, Column 1, Paragraph 5*].

Regarding claim 4, Rix meets all the claim limitations, as follows:

A method according to claim 2, wherein the characteristics include the presence of disparities between frames of the same signal [*Page 30, Column 1, Paragraph 5: Movement*].

Regarding claim 5, Rix meets all the claim limitations, as follows:

A method according to claim 2, wherein the characteristics include changes in at least one of the properties of: luminance, colour or texture [*Page 30, Column 1, Paragraph 5*].

Regarding claim 6, Rix meets all the claim limitations, as follows:

A method according to claim 1, in which the comparison includes a comparison of the perceptibility of corresponding boundaries identified in the first and second signals [*Page 30, Column 2, Paragraphs 1 and 2*].

Regarding claim 8, Rix meets all the claim limitations, as follows:

A method according to claim 1, in which the analysis includes identification of perceptually significant features [Page 27, Column 2, Paragraph 4], and the output indicative of the perceptual difference between the first and second signals is weighted according to the cognitive relevance of such image features [Figure 10; Page 32, Column 1, Paragraph 1].

Regarding claims 12-17 and 19 all claimed limitations are set forth and rejected as per discussion for claims 1-6 and 8.

Regarding claim 20, Rix meets all the claim limitations, as follows:

Apparatus according to claim 12, further comprising visual stage means for processing original input signals to emulate the response of the human visual system, to generate modified input signals for input to the analysis means [Figures 5 and 10].

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

[7] Claims 7 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rix in view of Huang et al. ("Huang") [NPL document titled, "A Robust Approach to Face and Eyes Detection from Images with Cluttered Background"].



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Regarding claim 7, Rix discloses the claim limitations as set forth in claim 1.

Rix does not explicitly disclose the following claim limitations:

A method according to claim 1, in which the comparison of the images includes the steps of: identification of the principal elements in each image, and compensation for difference in the relative positions of said principal elements.

However, in the same field of endeavor Huang discloses the deficient claim limitations, as follows:

A method according to claim 1, in which the comparison of the images includes the steps of: identification of the principal elements (i.e. face) in each image [*Page 4, Column 1, Paragraph 3*], and compensation for difference in the relative positions of said principal elements [*Page 4, Column 2, Paragraph 3*].

Rix and Huang are combinable because they are from the same field of image processing.

It would have been obvious to one with ordinary skill in the art at the time of invention to modify the teachings of Rix with Huang to perform registration, the motivation being obtain proper alignment of two images [*Page 4, Column 1, Paragraphs 1 and 2*].

Regarding claim 18 all claimed limitations are set forth and rejected as per discussion for claim 7.

[8] Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rix in view of Zhou [US 5,550,580].

Regarding claim 9, Rix discloses the claim limitations as set forth in claim 8.

Rix does not explicitly disclose the following claim limitations:

A method according to claim 8, in which the perceptually significant image features are those characteristic of the human face.

However, in the same field of endeavor Zhou discloses the deficient claim limitations, as follows:

A method according to claim 8, in which the perceptually significant image features are those characteristic of the human face [*Column 4 Lines 1-5*].

Rix and Zhou are combinable because they are from the same field of image processing.

It would have been obvious to one with ordinary skill in the art at the time of invention to modify the teachings of Rix with Zhou to identify the human face, the motivation being viewer focus would be on the human face and quality defects would be more perceptible in face region [*Column 4, Lines 1-5*].

Regarding claim 10, Zhou meets all the claim limitations, as follows:

A method according to claim 9, in which a weighting is applied to the output according to the significance of the feature in providing visual cues to speech [*Column 4, Lines 6-14*].

[9] Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rix in view of Bhaskaran et al. ("Bhaskaran") [NPL document titled, "Text and Image Sharpening of Scanned Images in the JPEG Domain"].

Regarding claim 11, Rix discloses the claim limitations as set forth in claim 8.

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Rix does not explicitly disclose the following claim limitations:

A method according to claim 8, in which perceptually significant image features are those by which individual text characters are distinguished.

However, in the same field of endeavor Bhaskaran discloses the deficient claim limitations, as follows:

A method according to claim 8, in which perceptually significant image features are those by which individual text characters are distinguished [*Page 326, Column 1, Paragraph 3*].

Rix and Bhaskaran are combinable because they are from the same field of image processing. It would have been obvious to one with ordinary skill in the art at the time of invention to modify the teachings of Rix with Bhaskaran to identify sharp edges, the motivation being the improve image quality [*Page 326, Column 1, Paragraph 4*].

### ***Contact Information***

[10] Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Sath V. Perungavoor whose telephone number is (571) 272-7455. The examiner can normally be reached on Monday to Friday from 8:30am to 5:00pm.

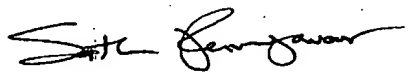
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Bhavesh M. Mehta whose telephone number is (571) 272-7453, can be reached on Monday to Friday from 9:00am to 5:00pm. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dated: February 27, 2006

By: 

Sath V. Perungavoor  
Telephone: (571) 272-7455

